

3.5" DRIVE F-354E SPECIFICATIONS

SPECIFICATIONS

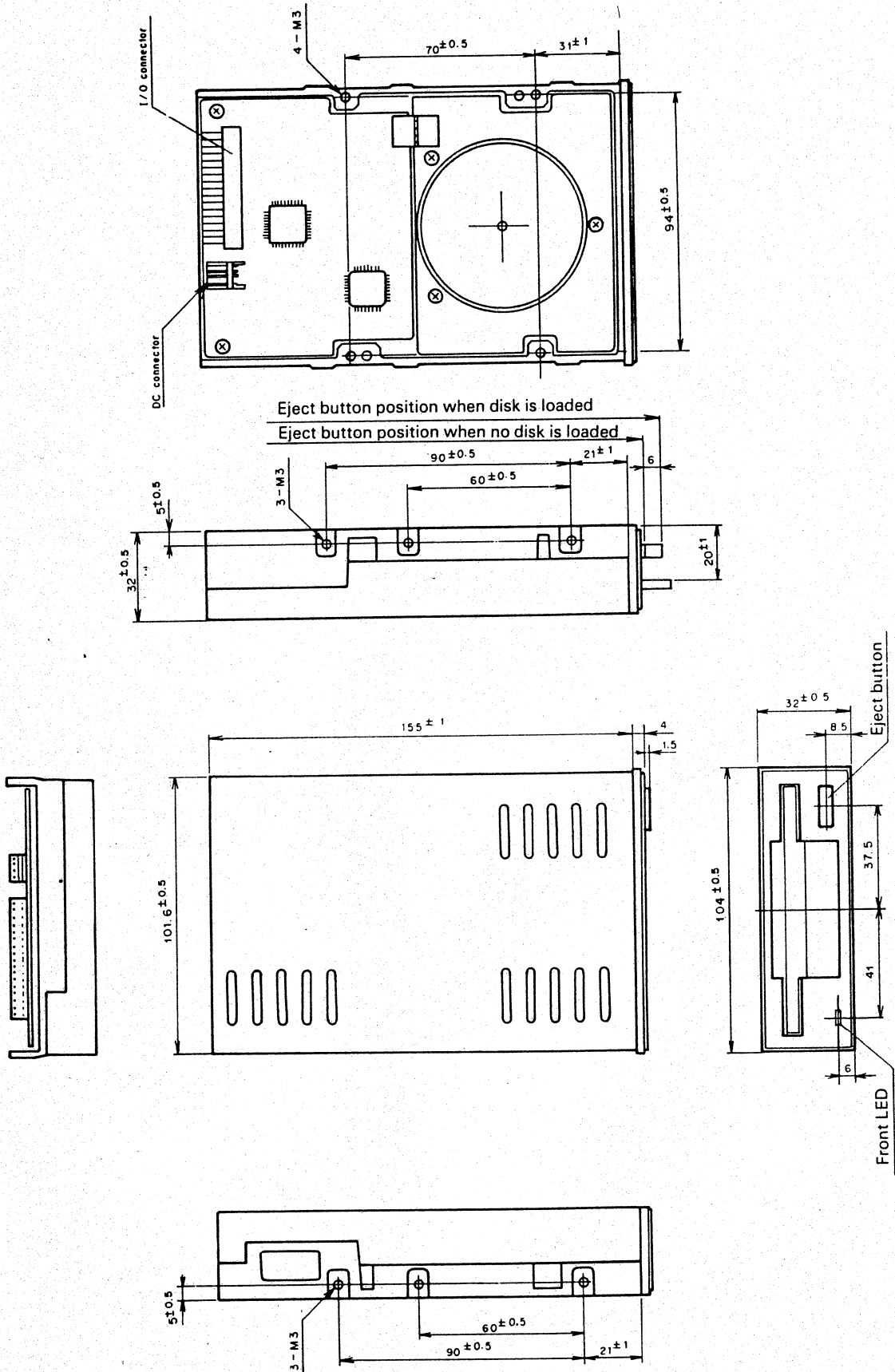
Specification (1)

Item			Characteristic	
			F-354E	F-353E
			Double density	Double density
Storage capacity	Unformatted	Per disk	1 M bytes	500 K bytes
		Per track	6.25 K bytes	
	Formatted (Equivalent to IBM format)	Per disk	655.36 K bytes	327.68 K bytes
		Per track	4096 bytes	
Recording density			8717 BPI	8187 BPI
Rate of data transfer			250 K bits per second	
Access time	Power on to ready time		0.5 sec.	
	Single track seek time		3 ms per track	
	Average access time		95 ms	
	Settling time		15 ms	
	Average latency time		100 ms	
Rotation speed Long term speed variation Instantaneous speed variation			300 rpm Less than +1.5% Less than +1.5%	
Number of tracks			160	80
Number of heads			2	1
Radius of track	Outer track	Side 0	39.5 mm	39.5 mm
		Side 1	38.0 mm	
	Inner track	Side 0	24.6875 mm	24.6875 mm
		Side 1	23.1875 mm	
Number of indexes			1	
Recording method			MFM	MFM
Track density			135 TPI	

Specification (2)

Item	Specification			
Physical dimensions	101.6 (W) × 32 (H) × 155 (D) mm			
Weight	600 grams			
Power supply	DC +12 V ±5%			
	DC +5 V ±5%			
Power consumption		5 V	12 V	POWER
	Stand by	210 mA TYP	50 mA MAX	1.65 W TYP.
	Read	210 mA TYP	170 mA TYP	3.09 W TYP.
	Write	220 mA TYP	190 mA TYP	3.38 W TYP.
	Seek	150 mA TYP	360 mA TYP	5.07 W TYP.
	Starting current	400 mA TYP	400 mA MAX	6.8 W MAX
Ripple voltage allowance	DC +12 V	Less than 150 mVp-p (including spike noise)		
	DC +5 V	Less than 100 mVp-p (including spike noise)		
Noise	Less than 55 phons (class A) (separated from the drive by 1m)			
Cabinet specifications	Front panel	Material: ABS	Color: Black	
	Front door	Material: ABS	Color: Ivory	

3.5" DRIVE F-354E MECHANICAL DIMENSIONS



3.5" DRIVE F-354E PIN CONFIGURATION

(1) DC Power connector

Pin number	Signal
1	+5V DC
2	+5V RETURN
3	+12V RETURN
4	+12V DC

(2) Interface signal connector

Pin number	Signal	Pin number	Signal
2	DISK CHANGE	1	GND
4	IN USE	3	GND
6	DRIVE SELECT 3	5	GND
8	INDEX	7	GND
10	DRIVE SELECT 0	9	GND
12	DRIVE SELECT 1	11	GND
14	DRIVE SELECT 2	13	GND
16	MOTOR ON	15	GND
18	DIRECTION SELECT	17	GND
20	STEP	19	GND
22	WRITE DATA	21	GND
24	WRITE GATE	23	GND
26	TRACK 00	25	GND
28	WRITE PROTECT	27	GND
30	READ DATA	29	GND
32	SIDE SELECT *1	31	GND
34	READY	33	GND

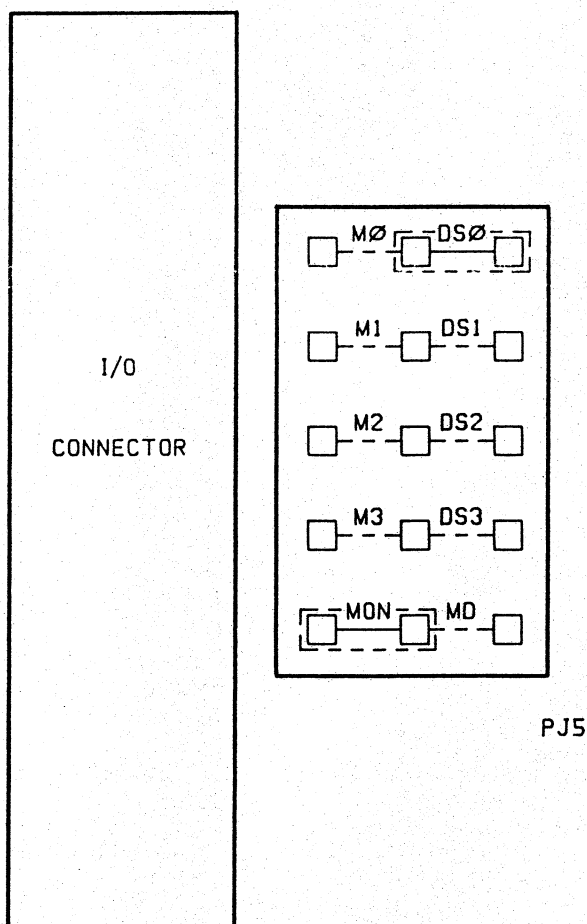
GND: SIGNAL GROUND

*1: Only F-354E

3.5" DRIVE F-354E SHORT PLUG

The MOTOR ON signal functions as same as that of the former 5-1/4" FDD.

However, when the short plug is set to MD, instead of MON, the DD motor ON/OFF operation can be controlled by DRIVE SELECT signal together with drive select operation. When the short plug is set to M0 – M3 instead of MON, the DD motor ON/OFF operation can be controlled by the DRIVE SELECT line. (For example, when short plugs are placed at DS0 and M2, the drive will be selected by the drive select 0 signal and its motor will be controlled by the drive select 2 signal.) With this function, the motor ON/OFF operation of the 2 drives can be independently controlled.



3.5" DRIVE F-354E TESTPOINTS

The following eight test points (with two GND) are provided on the control board, each of which is used in observing waveforms for FDD checking or adjustment.

(1) TP1-1, 3 (Pre-amp output) and TP1-2 (Analog GND)

The signal from the head is amplified by 150 times in level by the pre-amp. TP1-1, 3 are 180 antiphase to each other.

In order to observe these signals as one waveform using an oscilloscope with two channels, it is necessary to add the signals of both channels together (the signal of one channel is inverted in phase). TP1-2 is used in grounding the oscilloscope. TP1-1, 3 are used in checking the read/write head for its different characteristic or in checking and adjusting the tracking alignment or index burst timing.

(2) TP2-1 (Write protect sensor)

This is the test point of the write protect sensor output. With a write-protected disk (its write protect slot OPEN) the signal becomes HIGH level. This test point is used in check of the write protect sensor.

(3) TP2-2 (Disk-in sensor)

This is the test point of the disk-in sensor output. This signal becomes LOW level when a disk is inserted into the FDD.

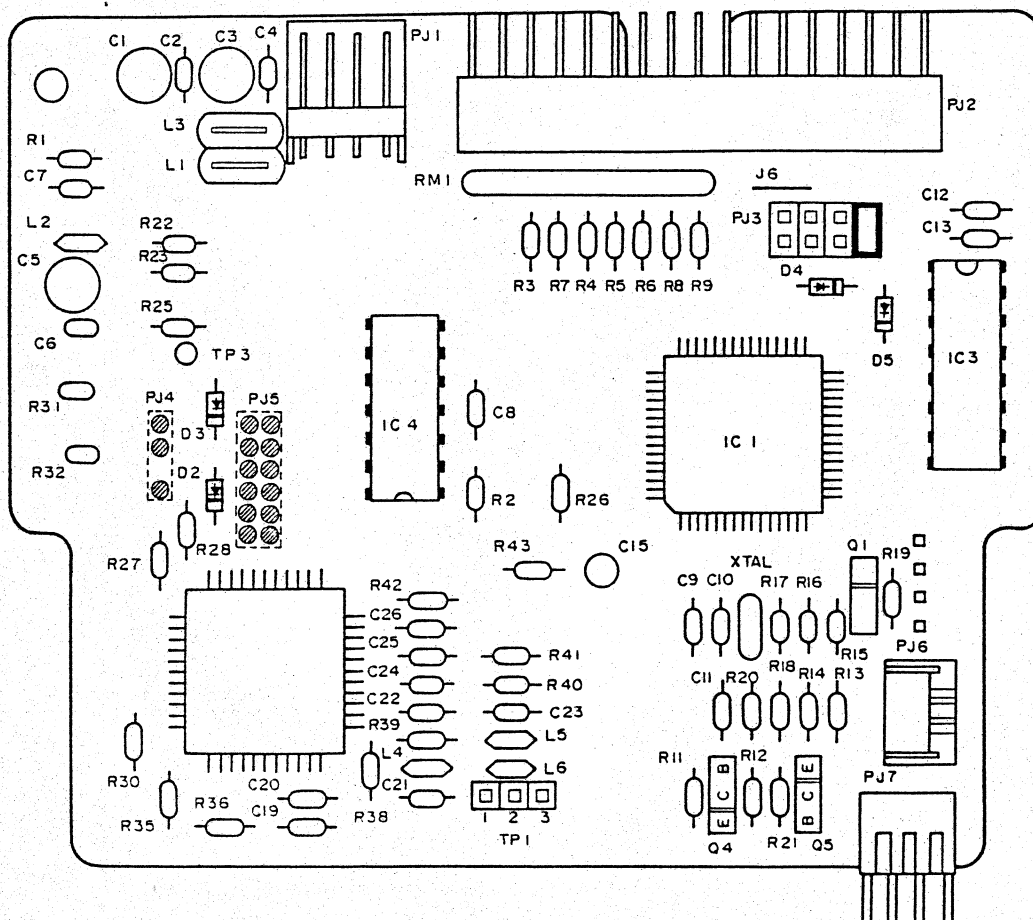
(4) TP2-3 (Index sensor)

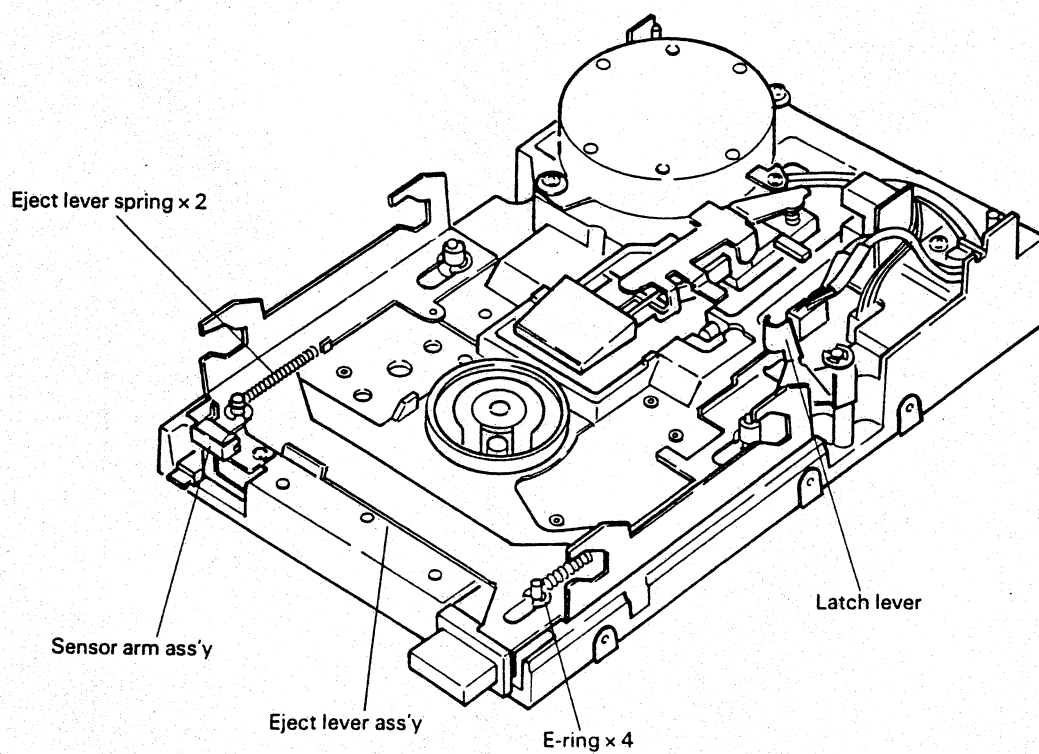
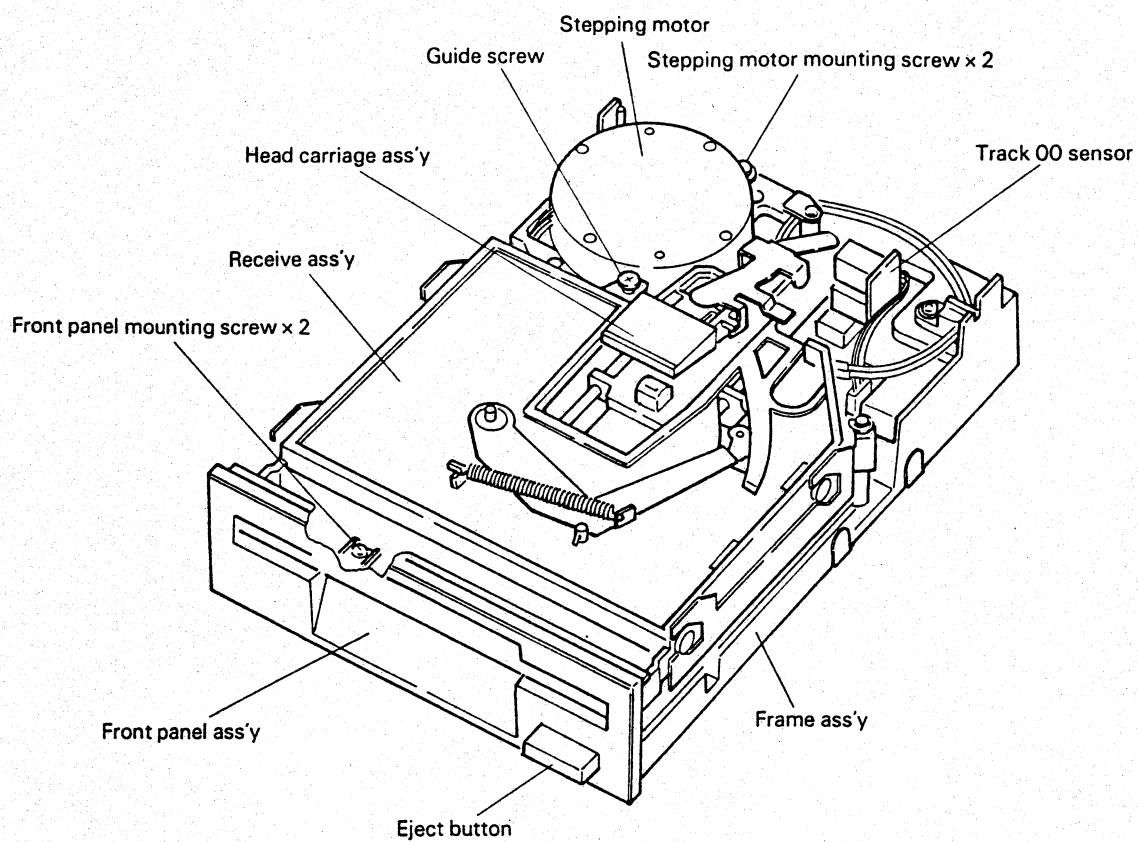
This is the test point of the index sensor output.

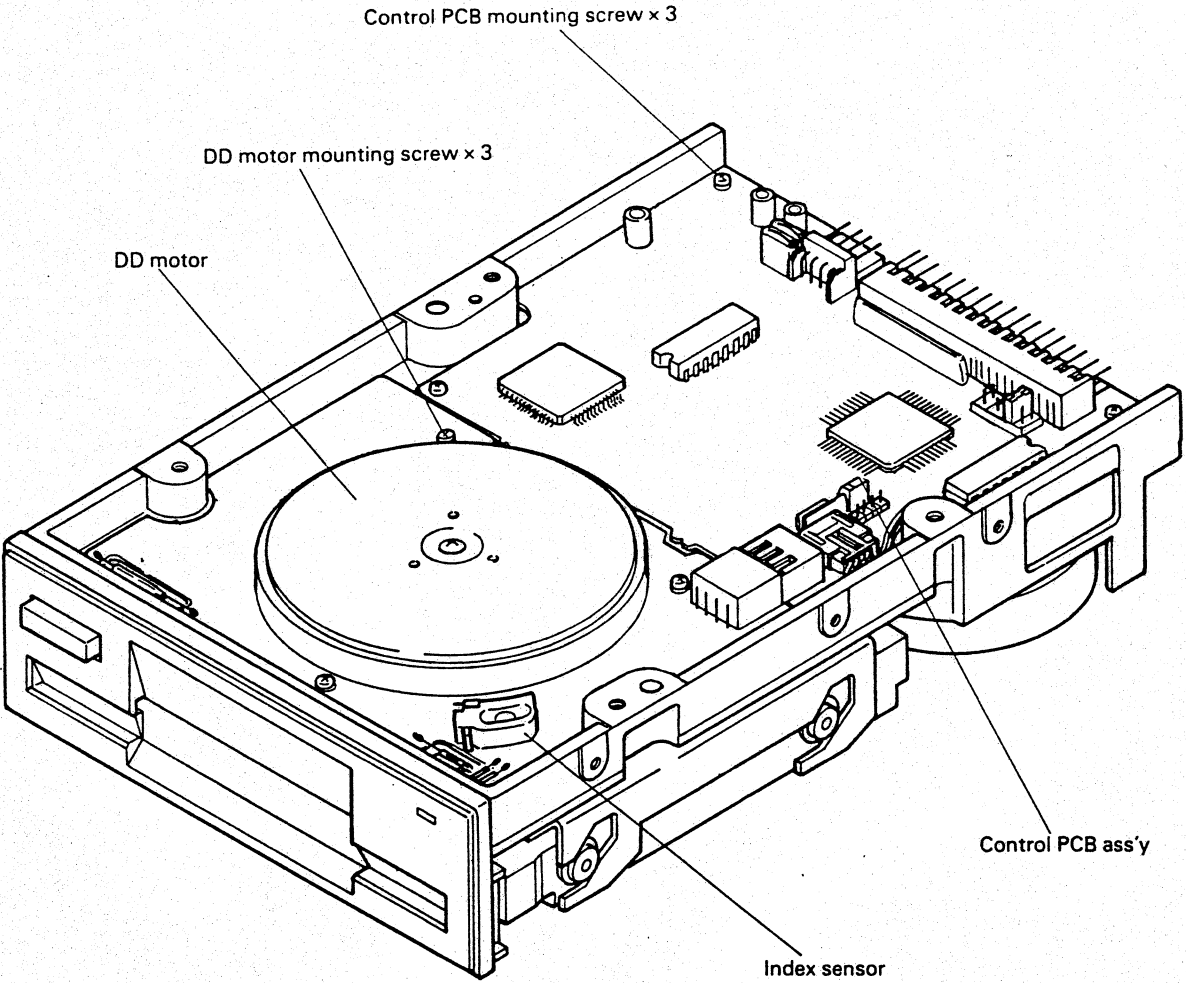
(5) TP2-4 (Digital GND)

(6) TP3 (Track 00 sensor)

This is the test point of the track 00 sensor output. This signal becomes LOW level when the head is located at track 00.



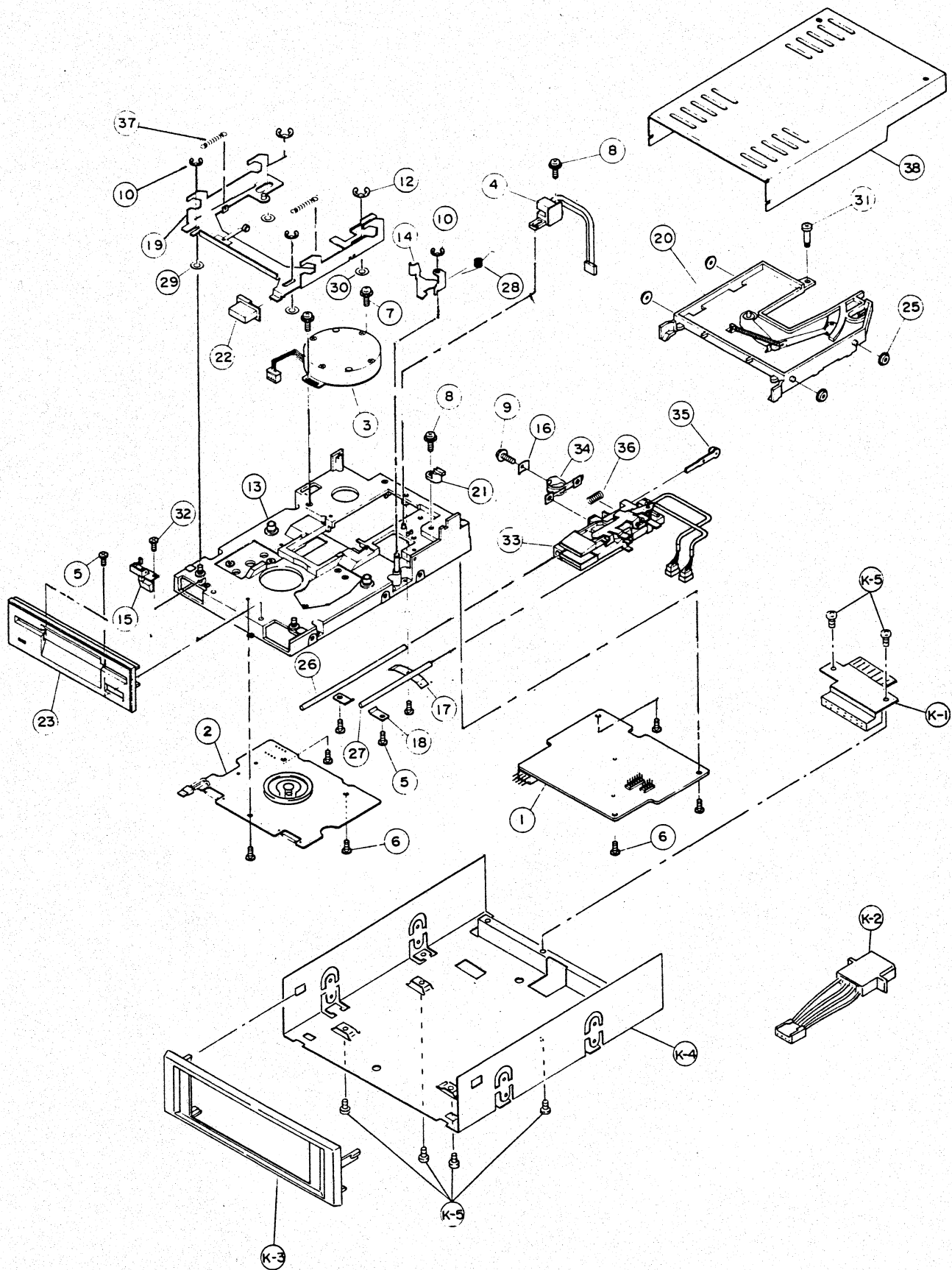




Mechanism Parts List for F-354E/EI

NO.	PARTS NO.	DESCRIPTION	QTY	REMARKS
1		CONTROL PCB ASSY	1	
2		DD MOTOR ASSY	1	
3		STEPPING MOTOR	1	
4		TRACK O SENSOR ASSY	1	
5		SCREW 2.5 × 4	5	
6		SCREW 2.5 × 4.5S	6	
7		SCREW 2.5 × 5 WS	2	
8		SCREW 2.5 × 6 WS	2	
9		SCREW 2.5 × 3	1	
10		E-RING 25 BLACK	2	
11		E-RING 25 UNI-BLACK	1	
12		E-RING 30	2	
13		FRAME 065	1	
14		LATCH LEVER	1	
15		WP SENSOR ASSY	1	
16		PULLEY WASHER 054	1	
17		RAIL RETAINER A	1	
18		RAIL RETAINER B	2	
19		EJECT LEVER ASSY	1	
20		RECEIVER ASSY	1	
21		SHIELD WIRE CLAMPER	1	
22		EJECT BUTTON ASSY: BLACK EJECT BUTTON ASSY: AT COLOR	1 1	
23		FRONT PANEL ASSY: BLACK FRONT PANEL ASSY: BEIGE	1 1	
24		LATCH LEVER AXIS	1	
25		EJECT ROLLER	4	
26		RAIL A	1	
27		RAIL B	1	
28		LATCH LEVER SPRING	1	
29		P-WASHER A	2	
30		P-WASHER B	2	
31		GUIDE SCREW	1	
32		SCREW 2 × 3.5 - 3.5×1	1	
33		HEAD CARRIAGE ASSY	1	
34		STEEL BELT	1	
35		BELT PLATE ASSY	1	
36		BELT SPRING	1	
37		EJECT SPRING	2	
38		SHIELD CASE	1	

Exploded View of Mechanism Parts for F-354EI



Electronic Parts (Common Use for F-354E and F-354EI)

New Version

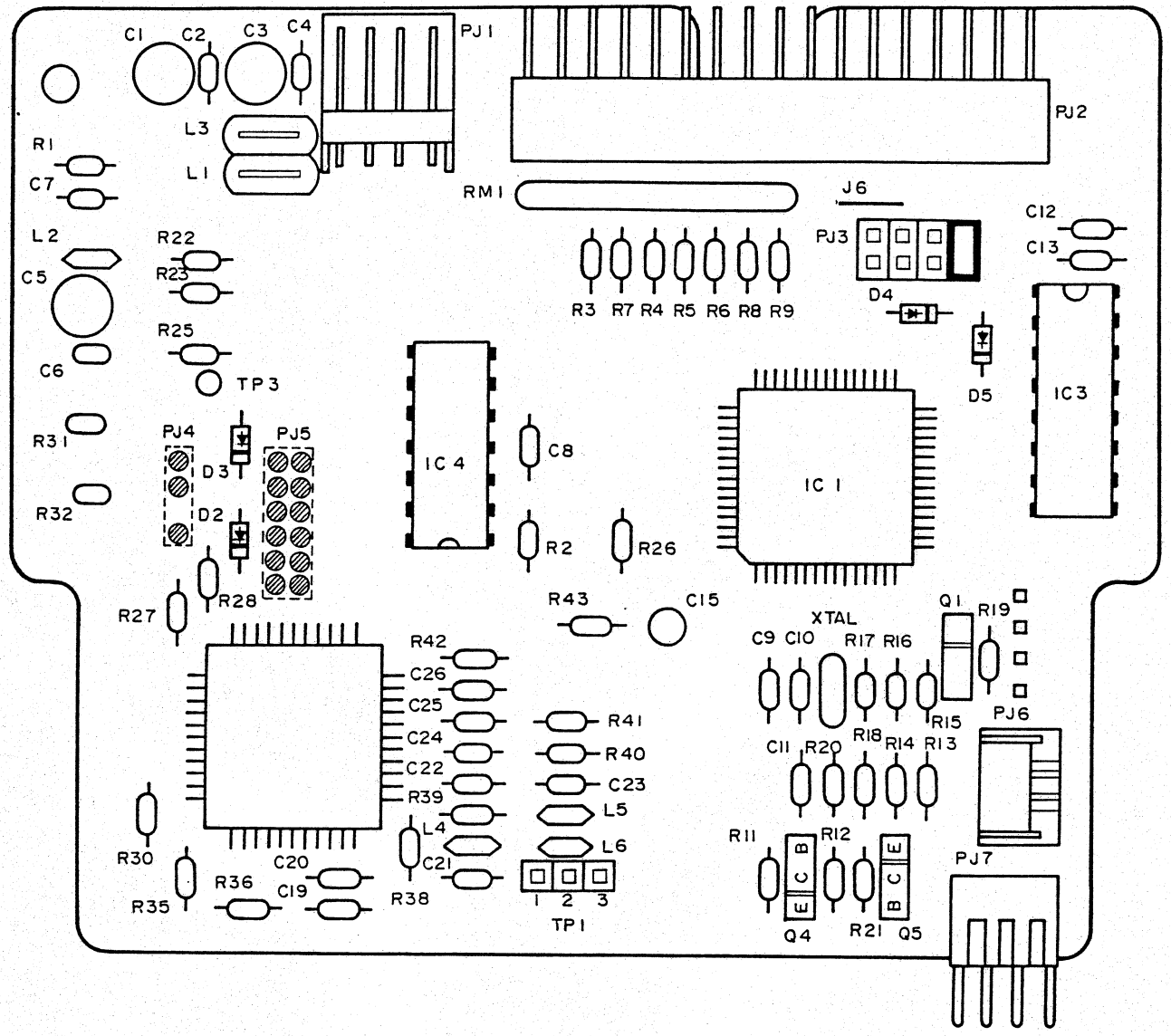
	DESCRIPTION	QTY	REMARKS
	CAPACITOR 16V, 2200P-TP	1	C21
	CAPACITOR 25V, 0.01 μ 2F	1	C7
	CAPACITOR 25V, 0.022 μ F	10	C2, 4, 6, 8, 12 13, 19, 20, 24, 25
	CAPACITOR 50V, 1000PF	1	C11
	CAPACITOR 50V, 150PF	1	C23
	CAPACITOR 50V, 680PF	1	C22
	CAPACITOR 50V, 30PF	2	C9, 10
	CAPACITOR 16V, 22 μ F	3	C1, 3, 5
	CAPACITOR 50V, 1 μ F	1	C15
	CAPACITOR 50V, 0.1 μ F	1	C26
	DIODE ISS176-TPA7	4	D2, 3, 4, 5
	SHORT PLUG	1	
	DD MOTOR 8PIN CONNECTOR	1	
	CONNECTOR 4PIN	1	
	P-CONNECTOR 4PIN MALE	1	
	I/F CONNECTOR 34PIN	1	
	HEAD CONNECTOR 12PIN	1	
	ST. MOTOR CONNECTOR 4 PIN	1	
	TEST POINT 3PIN	1	
	INDUCTOR 100 μ H	2	
	INDUCTOR 150 μ H	2	
	R-PACK 1/8W, 1K $\times$ 8	1	RM1
	SHORT PIN 8PIN	1	
	TEST POINT	1	
	FERRITE BEAD CORE 2P	2	
	CERAMIC RESONATOR 4MHZ	1	
	IC. DN74LS16-1	1	IC4
	IC.TA7774P	1	IC3
	IC. TA8515F	1	IC2
	IC. TC860IF	1	IC1
	TR. 2SC2021	3	Q1, 4, 5
	RESISTOR 1/6W, 100 Ω	1	R43
	RESISTOR 1/6W, 1K Ω	7	R3, 4, 5, 6, 7, 8, 9
	RESISTOR 1/6W, 10K Ω	12	R12, 13, 14, 15, 16, 17, 18, 20, 23, 25, 31, 32
	RESISTOR 1/6W, 100K Ω	3	R1, 11, 26
	RESISTOR 1/6W, 15 Ω	1	R2
	RESISTOR 1/6W, 200 Ω	1	R38
	RESISTOR 1/6W, 2200 Ω	1	R22
	RESISTOR 1/6W, 2.2K Ω	1	R39
	RESISTOR 1/6W, 3K Ω	1	R30

PARTS NO.	DESCRIPTION	QTY	REMARKS
	RESISTOR 1/6W, 330Ω	1	R19
	RESISTOR 1/6W, 390Ω	2	R40, 41
	RESISTOR, 1/6W, 3.9KΩ	2	R28, 42
	RESISTOR, 1/6W, 43KΩ	1	R35
	RESISTOR 1/6W, 47KΩ	1	R21
	RESISTOR 1/6W, 51KΩ	1	R36
	RESISTOR 1/6W, 620Ω	1	R27
	JUMPER WIRE 5MM	1	

Exclusive Parts for F-354EI

NO.		DESCRIPTION	QTY	REMARKS
K-1		I/F PCB ASSY	1	
K-2		POWER CONNECTOR ASSY	1	
K-3		FRONT PANEL II: BLACK	1	
		FRONT PANEL II: AT COLOR	1	
K-4		BASE	1	
K-5		SCREW 3 × 6	6	

New Version



New Version

